

APPENDIX A

PENDING CLAIMS

41. (as filed) An isolated nucleic acid encoding a polypeptide comprising an alpha subunit of a KCNQ potassium channel, wherein said polypeptide forms, with at least one additional KCNQ alpha subunit, a KCNQ potassium channel having the characteristic of voltage-gating; and wherein said nucleic acid specifically hybridizes under stringent conditions to a nucleic acid encoding an amino acid sequence of SEQ ID NO:5, wherein the hybridization reaction is incubated at 42°C in a solution comprising 50% formamide, 5x SSC, and 1% SDS and washed at 65°C in a solution comprising 0.2x SSC and 0.1% SDS.

42. (as filed) The isolated nucleic acid of claim 41, wherein said nucleic acid selectively hybridizes under stringent conditions to a nucleic acid encoding an amino acid sequence of SEQ ID NO:4, wherein the hybridization reaction is incubated at 42°C in a solution comprising 50% formamide, 5x SSC, and 1% SDS and washed at 65°C in a solution comprising 0.2x SSC and 0.1% SDS.

43. (as filed) The isolated nucleic acid of claim 41, wherein said nucleic acid encodes a protein having an amino acid sequence selected from the group consisting of SEQ ID NO:4 and SEQ ID NO:5.

44. (as filed) The isolated nucleic acid of claim 41, wherein said nucleic acid has a nucleotide sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, and SEQ ID NO:3.

45. (as filed) The nucleic acid of claim 41, wherein the polypeptide encoded by the nucleic acid comprises an alpha subunit of a homomeric potassium channel.

46. (as filed) The nucleic acid of claim 41, wherein the polypeptide encoded by the nucleic acid comprises an alpha subunit of a heteromeric potassium channel.

47. (as filed) An expression vector comprising a nucleic acid of claim 41.

48. (as filed) A host cell transfected with the vector of claim 47.